



Haze Battery Company Ltd

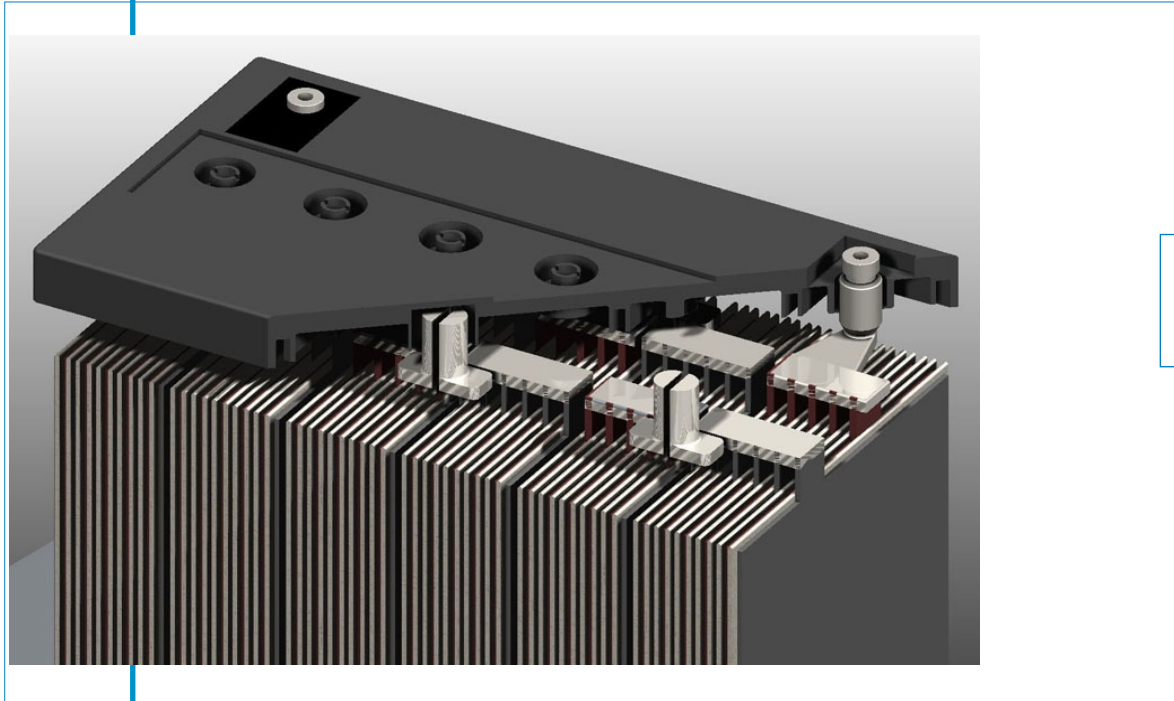


**Sealed Lead Acid 6 & 12 Volt  
Monobloc  
AGM Range**

**CONSTRUCTION** - AGM battery construction is as shown in the diagram below. The positive and negative grids are cast from a calcium / tin lead alloy to reduce grid growth and corrosion. The active material is manufactured from high purity lead (99.9999%) to minimise the negative effects of impurities.

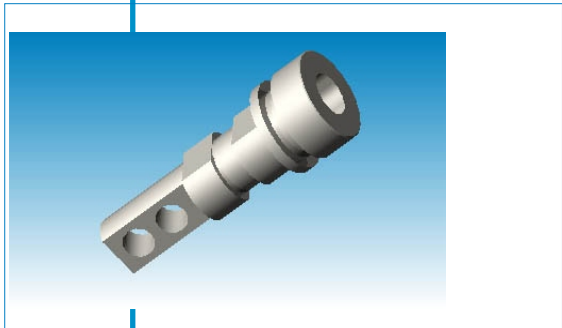
Separator is a mat of random woven acid resistant glass fibres, which acts as a sponge - soaking up and immobilising the electrolyte whilst maintaining good acid to plate contact and availability during discharge. "S wrapping" is employed to eliminate the risk of short circuits due to mousing and debris at the bottom of the cell.

The purpose of the separator is to maintain a constant distance between the positive and negative plates, thus removing the possibility of short circuits whilst allowing the active material to fully react with the electrolyte. The random weaving also results in an open structure, which offers minimal resistance to the flow of electrolyte during filling.



AGM construction with case removed and cover cut away to show internal battery parts.

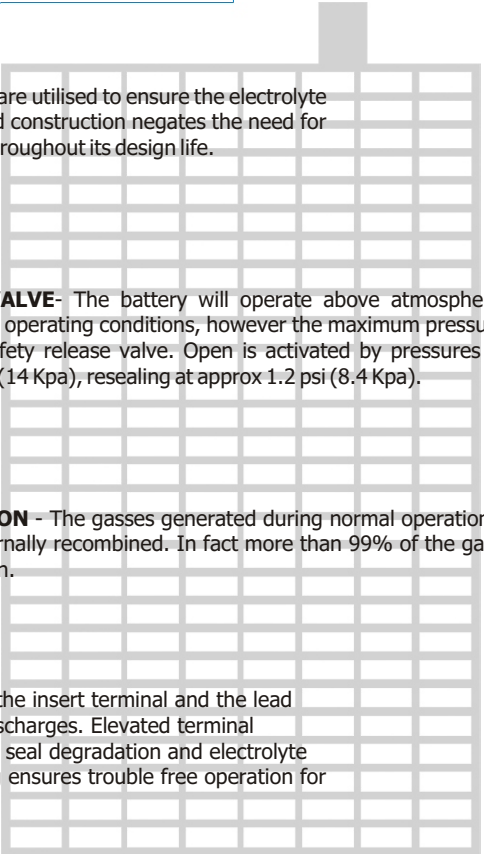
**ELECTROLYTE FILLING** - Special production and QC systems are utilised to ensure the electrolyte saturation is optimised for each battery. The battery design and construction negates the need for electrolyte addition and the battery remains maintenance free throughout its design life.



**SAFETY RELEASE VALVE**- The battery will operate above atmospheric pressure under normal operating conditions, however the maximum pressure is governed by the safety release valve. Open is activated by pressures in excess of approx. 2 psi (14 Kpa), resealing at approx 1.2 psi (8.4 Kpa).

**GAS RECOMBINATION** - The gasses generated during normal operation of the battery are internally recombined. In fact more than 99% of the gas achieves recombination.

**TERMINAL CONSTRUCTION** - The contact quality between the insert terminal and the lead post is of vital importance during short duration / high Amp discharges. Elevated terminal temperatures are the result of poor contact, eventually causing seal degradation and electrolyte leaks. Haze design and assembly technique for terminal casting ensures trouble free operation for the design life of the battery.



### AGM Vs Gel

Each battery has advantages and disadvantages, it is therefore important to choose the right battery for the application.

Advantages of AGM Batteries:

- Lower initial cost when compared to Gelled Electrolyte cells.
- Ideal for starting and stationary applications.
- Superior performance for shorter duration / higher current discharges.
- Smaller size battery can be used for higher rate discharges.



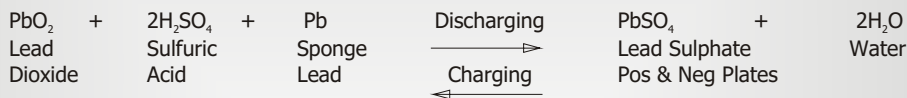
### Applications

- Float service
- Uninterruptible Power Supplies
- Medical
- Telecommunications
- Switch Gear
- Photovoltaic
- Solar
- Wind
- Control Systems
- Cellular Radio Stations
- Cathodic Protection
- Navigation Aids
- Marine equipment
- Electric Power Systems

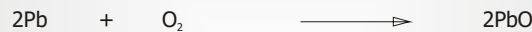
### Capacity temperature correction Factor to be applied to Data at 20 Degrees C

Discharge Time	-30 °C	-20 °C	-10 °C	0 °C	5 °C	10 °C	15 °C	20 °C	25 °C	30 °C	35 °C	40 °C	50 °C
5 minutes to 59 minutes	0.23	0.417	0.605	0.778	0.86	0.91	0.96	1	1.037	1.063	1.085	1.1	1.116
1 Hour to 100 Hours	0.277	0.464	0.647	0.816	0.886	0.93	0.97	1	1.028	1.05	1.063	1.07	1.078

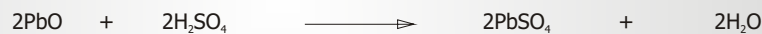
**CHEMICAL REACTION-** The chemical reaction for the Discharge / Recharge process is represented by the following formula:



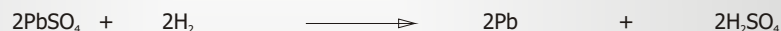
Under normal float charge conditions the oxygen passes through the separator from the positive to the negative plate where it reacts with the negative active material to form lead oxide.



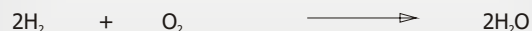
In the acid conditions the lead oxide reacts with the sulfuric acid to form lead sulphate.



The lead sulphate formed on the negative is then reduced to lead and sulfuric acid by the evolving hydrogen.



If the equations are resolved and like terms cancelled out on both sides of the equation the result is:



This reaction summarises what is meant by GAS RECOMBINATION. The process can never be 100% efficient, normal recombination efficiency is 95 - 99%.

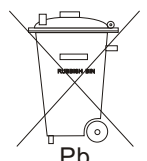
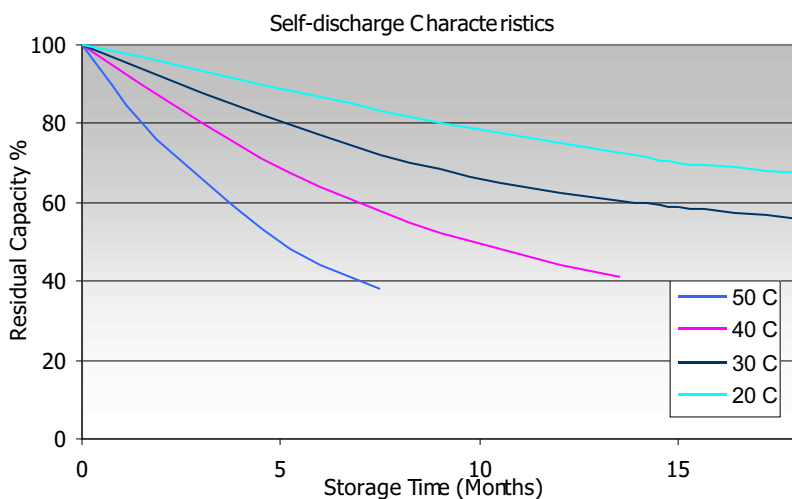
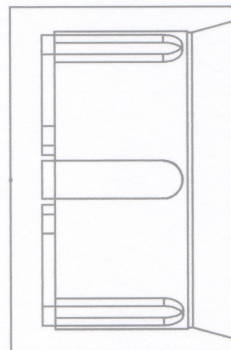
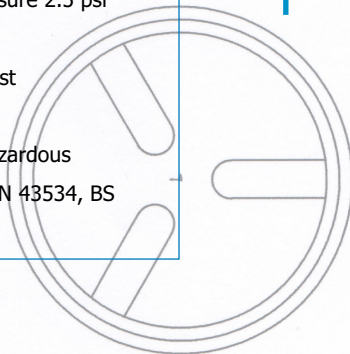


## Specifications

Nominal Voltage	6 & 12 Volts
Design Life	12 Years @ 20 °C
Operating Temperature	-10 °C to 45 °C
Grid alloy	Calcium / Tin lead alloy
Plates	Flat Pasted
Separator	Absorbant Glass Mat
Active material	Very high purity lead
Case and cover	ABS (VO on request)
Charge Voltage	Float 2.27 - 2.30 VPC @20 °C Cycling 2.40 @20 °C Max. 2.4 VPC Max ripple 3.5% Charging V
Electrolyte	Sulphuric acid Analytical grade purity
Venting Valve	EPDM Rubber 1.5 to 2 psi (10.5 - 14 KPa) release pressure. Resealing at 1 psi (7 KPa)
Terminal	Various types Epoxy sealed by extended mechanical paths
Torque setting	The recommended torque value for all types is 5-7 Nm
Cables	Insulated cables / connectors supplied on request.

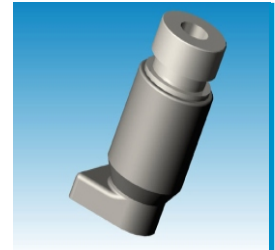
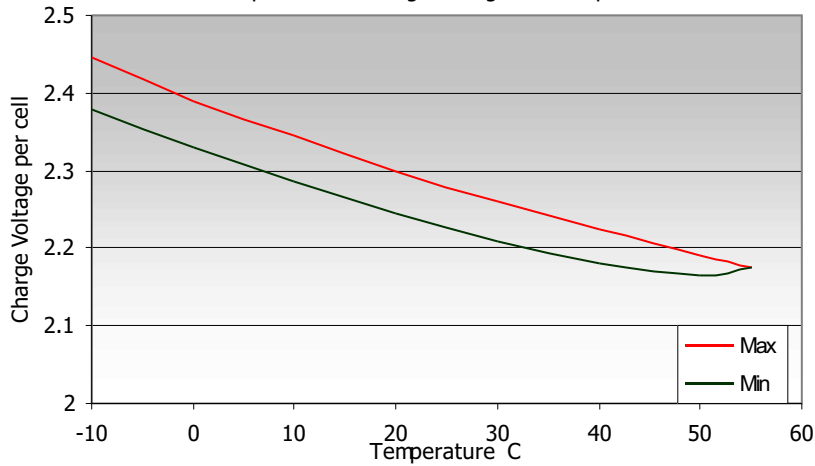
## Innovative Features

- Completely maintenance free, sealed construction eliminates the need for watering
- Increased durability and deep cycle ability for heavy demand applications
- Special formation process
- Analytical Grade electrolyte
- Spill proof / leak proof
- Valve regulated Max internal pressure 2.5 psi
- Multi-position usage
- ABS Case and cover - VO on request
- Low self discharge
- FAA and IATA approved as non-hazardous
- Built to comply with IEC 896-2, DIN 43534, BS 6290 Pt4, Eurobat.

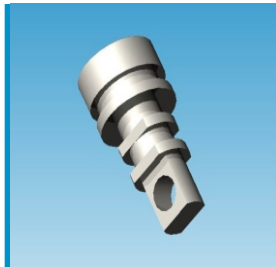
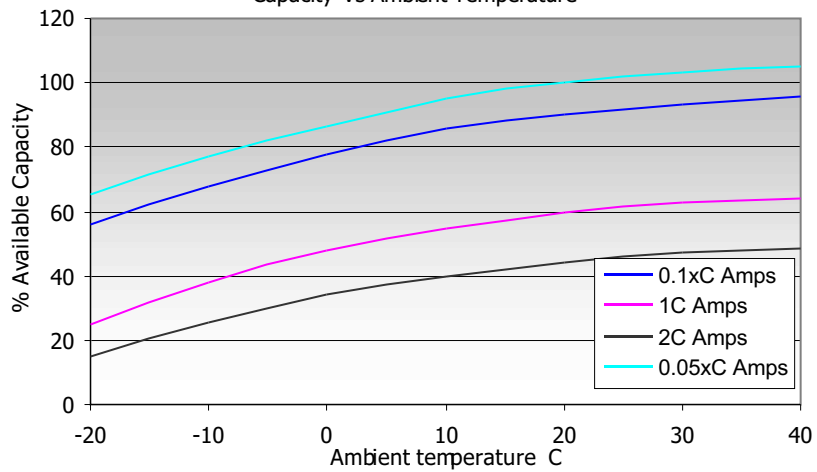


Haze Battery Company keenly encourages environmental awareness; PLEASE follow guidelines for the recycling /disposal of lead.

Relationship Between Charge Voltage and Temperature



Capacity Vs Ambient Temperature



**CHARGING CHARACTERISTICS**

**Floating** - The optimum float voltage for a battery is temperature dependant, at 15 - 24°C the recommended value is 2.27 - 2.30V. It is recommended that battery installation sites are temperature controlled, however float voltage can be increased or decreased to compensate for temperature variations. Adjustment is calculated at +/- 3 mV per degree C.

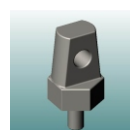
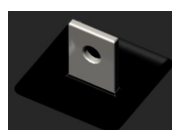
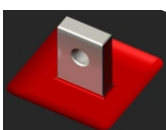
Operating Temperature	Recommended Applied Float Voltage VPC
0-9	2.33 - 2.35
10-14	2.30 - 2.33
15-19	2.27 - 2.30
20-24	2.27 - 2.30
25-29	2.25 - 2.27
30-34	2.23 - 2.25
35-40	2.21 - 2.23

**Terminal Options** (left to right)

- ▶ Lead Flag
- ▶ Automotive
- ▶ J Type
- ▶ Copper Flag
- ▶ J Type Adapter
- ▶ Insert

Insert are made from brass with copper, nickel and silver plating giving excellent mechanical, electrical and corrosion resistant properties.

The most suitable charging method for battery life and performance is the constant voltage method with a limited initial current, usually limited to a maximum of  $C_{20}/4$ .



Battery Model	Time in Minutes - Amps to 1.85 VPC 20-25 °C										
	5	10	15	20	25	30	35	40	45	60	90
HZB12-18	46.3	33.2	27.0	22.9	19.9	17.5	15.6	14.1	12.9	10.3	7.6
HZB12-26	66.6	48.8	39.6	32.9	28.1	24.7	22.0	19.8	18.0	14.4	10.4
HZB12-28	78.5	57.1	45.5	38.3	32.9	28.8	25.6	23.0	21.0	16.7	12.1
HZB12-33	94	64.2	52.2	44.7	39.8	35.5	31.5	28.3	25.7	19.9	13.9
HZB12-44	118	83	68.7	58.9	51.7	45.9	41.1	37.3	34.2	26.9	18.9
HZB12-55	142	109	89	74.6	64.0	56.3	50.3	45.4	41.6	33.1	23.4
HZB12-60	149	102	81	67	58.8	51.9	46.6	42.5	39.3	32.6	25.2
HZB12-70J	164	132	111	94	81.3	71.8	64.5	58.7	53.8	42.9	30.1
HZB12-70	168	134	112	97	84.0	74.5	66.7	60.5	55.3	44.1	31.1
HZB12-80	182	147	119	103	91.0	81.2	74.3	68.2	63.2	50.9	36.0
HZB12-90	206	161	133	114	99	89.1	80.2	73.1	67.2	54.5	40.1
HZB12-100	227	182	152	130	112	99	89.5	81.6	75.1	59.7	42.5
HZB12-110	248	201	168	142	123	110	99	89.9	82.3	65.5	47.1
HZB12-115	260	192	156	134	120	107	98	89.8	82.7	67.9	50.5
HZB12-120	259	213	179	156	135	120	108	99	90.3	72.8	52.1
HZB12-135	275	223	201	181	165	149	135	123	112	88.7	64.3
HZB12-150	270	229	199	177	159	144	130	119	110	89.3	64.6
HZB12-160	292	250	221	200	181	165	151	138	128	103	73.9
HZB12-200	325	280	245	221	203	186	172	159	148	120	85.6
HZB12-230	389	328	285	258	236	218	201	185	171	139	101
HZB6-110	220	183	163	140	121	107	96	87.9	81.1	65.6	47.0
HZB6-125	258	210	175	150	130	115	104	94.8	87.5	71.7	53.1
HZB6-160	268	236	201	182	164	150	138	129	121	100	73.2
HZB6-200	325	274	246	225	205	188	173	161	150	122	86.6

Battery Model	Time in Hours					
	2	3	4	5	6	
HZB12-18	6.01	4.31	3.45	2.75	2.35	
HZB12-26	8.34	6.03	4.75	3.95	3.44	
HZB12-28	9.64	7.00	5.52	4.64	4.02	
HZB12-33	10.7	7.45	5.82	4.84	4.17	
HZB12-44	14.7	10.5	8.20	6.85	5.96	
HZB12-55	18.1	12.7	10.08	8.45	7.29	
HZB12-60	20.5	14.9	11.7	9.7	8.23	
HZB12-70J	23.5	16.4	12.8	10.7	9.24	
HZB12-70	24.5	17.2	13.4	11.1	9.66	
HZB12-80	28.1	19.8	15.5	13.0	11.3	
HZB12-90	31.5	22.2	17.5	14.6	12.7	
HZB12-100	33.3	23.7	18.8	15.8	13.8	
HZB12-110	36.7	25.6	19.8	16.4	14.1	
HZB12-115	40.9	29.6	23.6	19.6	16.8	
HZB12-120	40.7	28.7	22.4	18.6	16.0	
HZB12-135	50.9	36.1	28.5	23.7	20.5	
HZB12-150	50.7	35.6	27.7	23.0	19.9	
HZB12-160	57.8	40.8	32.1	26.9	23.4	
HZB12-200	67.0	47.6	37.4	31.4	27.4	
HZB12-230	80.6	58.1	46.4	39.0	34.1	
HZB6-110	36.8	26.2	20.5	17.0	14.7	
HZB6-125	42.8	31.6	25.6	21.7	18.7	
HZB6-160	57.1	40.5	32.0	26.9	23.4	
HZB6-200	68.0	47.9	37.6	31.5	27.3	

Battery Model	Time in Minutes - Amps to 1.80 VPC 20-25 °C										
	5	10	15	20	25	30	35	40	45	60	90
HZB12-18	52.2	36.2	28.7	24.0	20.7	18.1	16.1	14.5	13.3	10.6	7.8
HZB12-26	72.1	51.5	41.2	34.0	29.0	25.3	22.5	20.2	18.4	14.6	10.6
HZB12-28	83.6	60.2	47.7	39.5	33.7	29.4	26.2	23.6	21.5	17.0	12.3
HZB12-33	103	67.8	54.7	46.4	41.3	36.7	32.4	29.1	26.3	20.4	14.2
HZB12-44	128	90	72.6	61.9	53.8	47.4	42.4	38.4	35.1	27.7	19.5
HZB12-55	157	118	95	78.0	66.9	58.7	52.3	47.3	43.1	34.2	24.0
HZB12-60	164	106	83	69	59.9	53.3	48.0	43.8	40.6	33.4	25.9
HZB12-70J	183	146	119	100	85.3	75.1	67.3	60.9	55.6	44.1	31.1
HZB12-70	187	143	118	101	87.8	77.2	68.9	62.5	57.2	45.4	32.1
HZB12-80	201	161	129	109	95.7	85.5	77.3	71.4	65.6	52.4	36.8
HZB12-90	236	173	141	120	105	92.8	83.3	75.9	69.7	56.2	41.1
HZB12-100	276	205	166	138	119	105	93.8	85.2	77.7	61.7	43.7
HZB12-110	290	224	182	151	131	115	103	93.6	85.6	67.9	48.5
HZB12-115	295	215	170	145	128	114	103	94.1	86.4	70.1	51.9
HZB12-120	309	240	195	165	143	126	112	102	93.6	74.8	53.3
HZB12-135	341	257	220	193	172	156	141	128	116	91.9	66.4
HZB12-150	338	258	219	191	169	152	137	125	114	91.6	66.3
HZB12-160	367	291	251	220	196	176	159	145	133	107	76.0
HZB12-200	408	325	276	246	220	200	183	168	156	125	89.1
HZB12-230	452	362	311	276	251	229	208	192	177	143	103
HZB6-110	264	203	173	146	127	112	100	90.6	83.4	67.1	47.9
HZB6-125	308	232	185	156	135	119	107	97.4	89.9	73.4	54.1
HZB6-160	336	276	223	196	175	158	144	135	126	103	75.3
HZB6-200	408	324	276	246	220	200	184	171	158	127	90.7

Battery Model	Time in Hours					
	2	3	4	5	6	
HZB12-18	6.18	4.41	3.45	2.83	2.41	
HZB12-26	8.41	6.12	4.82	4.00	3.48	
HZB12-28	9.79	7.09	5.59	4.69	4.07	
HZB12-33	11.0	7.63	5.97	4.95	4.28	
HZB12-44	15.2	10.8	8.48	7.08	6.15	
HZB12-55	18.6	13.1	10.36	8.68	7.50	
HZB12-60	20.9	15.1	11.9	9.8	8.35	
HZB12-70J	24.1	16.8	13.1	10.9	9.42	
HZB12-70	25.1	17.6	13.8	11.5	9.92	
HZB12-80	28.6	20.1	15.8	13.2	11.5	
HZB12-90	32.1	22.7	17.9	14.9	13.0	
HZB12-100	34.2	24.2	19.1	16.1	14.0	
HZB12-110	37.9	26.2	20.3	16.8	14.5	
HZB12-115	41.7	30.1	23.8	19.7	17.0	
HZB12-120	41.6	29.2	22.7	18.9	16.3	
HZB12-135	52.2	36.9	29.1	24.3	20.9	
HZB12-150	51.9	36.4	28.3	23.5	20.3	
HZB12-160	59.4	41.6	32.8	27.5	24.0	
HZB12-200	69.3	49.0	38.4	32.3	28.1	
HZB12-230	82.0	59.1	47.1	39.7	34.8	
HZB6-110	37.4	26.6	20.8	17.3	14.9	
HZB6-125	43.7	32.4	26.3	22.3	19.4	
HZB6-160	58.7	41.5	32.9	27.6	24.0	
HZB6-200	70.9	50.0	39.1	32.7	28.3	

Battery Model	Time in Minutes - Amps to 1.75 VPC 20-25 °C										
	5	10	15	20	25	30	35	40	45	60	90
HZB12-18	55.9	37.8	29.8	24.8	21.3	18.6	16.5	14.8	13.5	10.8	7.9
HZB12-26	75.7	53.5	42.4	34.8	29.5	25.8	23.0	20.7	18.8	14.9	10.7
HZB12-28	87.7	62.4	49.0	40.5	34.4	30.0	26.6	24.0	21.9	17.3	12.4
HZB12-33	108	70.3	56.2	47.3	41.9	37.2	32.9	29.6	26.7	20.7	14.4
HZB12-44	135	93.5	75.1	63.4	54.8	48.3	43.2	39.1	35.6	28.0	19.7
HZB12-55	165	123	97.3	80.0	68.2	59.8	53.3	48.2	43.9	34.7	24.4
HZB12-60	176	111	86	70.7	61.2	54.4	48.9	44.6	41.2	34.1	26.3
HZB12-70J	195	154	124	103	88.2	77.3	68.9	62.4	56.9	44.9	31.6
HZB12-70	199	148	122	104	90.0	79.2	70.6	64.2	58.8	46.3	32.6
HZB12-80	215	167	136	114	99.6	88.8	80.0	73.4	67.2	53.3	37.4
HZB12-90	251	182	147	124	108	95.0	85.5	77.7	71.5	57.7	41.8
HZB12-100	294	217	173	142	122	107	95.7	87.0	79.5	62.9	44.5
HZB12-110	321	238	191	159	136	119	106	96.5	87.6	69.0	49.2
HZB12-115	328	228	181	152	133	117	106	96.0	88.2	71.5	52.6
HZB12-120	332	255	203	170	147	129	115	105	95.6	76.3	54.4
HZB12-135	381	273	227	201	177	160	144	130	118	93.3	67.5
HZB12-150	370	275	230	199	175	156	140	128	116	93.2	67.3
HZB12-160	414	318	266	230	203	181	163	148	136	108	77.7
HZB12-200	444	342	292	258	231	208	190	174	160	128	90.7
HZB12-230	496	384	322	284	258	234	213	196	180	145	105
HZB6-110	282	213	180	151	130	115	102	92.4	84.9	68.3	48.6
HZB6-125	329	244	193	161	139	122	109	99.5	91.5	74.8	54.7
HZB6-160	370	295	236	206	182	165	149	138	129	105	76.6
HZB6-200	444	347	292	258	231	209	193	177	163	131	92.2

Battery Model	Time in Hours					
	2	3	4	5	6	
HZB12-18	6.31	4.49	3.51	2.88	2.45	
HZB12-26	8.49	6.18	4.86	4.04	3.51	
HZB12-28	9.88	7.17	5.65	4.73	4.11	
HZB12-33	11.1	7.76	6.05	5.03	4.35	
HZB12-44	15.4	11.0	8.63	7.20	6.26	
HZB12-55	18.9	13.3	10.56	8.87	7.67	
HZB12-60	21.3	15.2	12.0	9.9	8.42	
HZB12-70J	24.6	17				

Amps to 1.85 VPC					
	7	8	10	12	20
	2.05	1.83	1.52	1.31	0.88
	3.04	2.76	2.30	1.98	1.28
	3.56	3.20	2.66	2.28	1.49
	3.68	3.33	2.78	2.40	1.57
	5.33	4.84	4.13	3.57	2.33
	6.53	5.92	4.96	4.26	2.76
	7.20	6.41	5.28	4.49	2.80
	8.24	7.39	6.17	5.30	3.50
	8.61	7.80	6.57	5.60	3.64
	10.02	9.01	7.51	6.44	4.08
	11.2	10.06	8.43	7.19	4.67
	12.2	10.9	9.08	7.78	5.01
	12.5	11.2	9.31	8.01	5.21
	14.7	13.0	10.69	9.05	5.63
	14.1	12.7	10.6	9.12	5.73
	18.1	16.3	13.6	11.58	7.38
	17.6	15.9	13.2	11.3	7.40
	21.0	19.1	16.0	13.8	8.84
	24.3	21.9	18.4	15.9	10.49
	30.2	27.3	22.9	19.6	12.4
	13.0	11.7	9.73	8.39	5.47
	16.5	14.7	12.03	10.17	6.40
	20.8	18.8	15.9	13.6	8.83
	24.2	21.8	18.1	15.5	9.66

Battery Mo del	Time in Hours Ah to 1.85 VPC 20-25 °C										
	1.5	2	3	4	5	6	7	8	10	12	20
HZB12-18	11.4	12.0	12.9	13.4	13.8	14.1	14.4	14.6	15.2	15.8	17.6
HZB12-26	15.6	16.7	18.1	19.0	19.8	20.7	21.3	22.1	23.0	23.8	25.7
HZB12-28	18.1	19.3	21.0	22.1	23.2	24.1	24.9	25.6	26.6	27.4	29.8
HZB12-33	20.8	21.4	22.3	23.3	24.2	25.0	25.8	26.6	27.8	28.8	31.5
HZB12-44	28.4	29.5	31.4	32.8	34.2	35.7	37.3	38.7	41.3	42.9	46.6
HZB12-55	35.0	36.2	38.2	40.3	42.2	43.8	45.7	47.4	49.6	51.1	55.1
HZB12-60	37.8	41.0	44.6	46.8	48.3	49.4	50.4	51.3	52.8	53.8	56.0
HZB12-70J	45.2	47.1	49.2	51.3	53.4	55.4	57.7	59.1	61.7	63.7	70.1
HZB12-70	46.7	49.0	51.5	53.6	55.7	58.0	60.2	62.4	65.7	67.3	72.8
HZB12-80	54.0	56.3	59.3	62.2	64.9	67.6	70.2	72.1	75.1	77.3	81.5
HZB12-90	60.2	62.9	66.6	70.0	72.9	76.0	78.7	80.5	84.3	86.3	93.4
HZB12-100	63.8	66.5	71.2	75.1	78.8	82.5	85.2	87.4	90.8	93.4	100
HZB12-110	70.6	73.4	76.8	79.0	82.0	84.7	87.3	89.4	93.1	96.1	104
HZB12-115	75.8	81.7	88.8	94.3	97.8	101	103	104	107	109	113
HZB12-120	78.2	81.4	86.2	89.6	93.1	96.2	98.5	102	106	109	115
HZB12-135	96.4	102	108	114	119	123	127	131	136	139	148
HZB12-150	96.9	101	107	111	115	120	123	127	132	136	148
HZB12-160	111	116	122	129	135	141	147	153	160	165	177
HZB12-200	128	134	143	150	157	164	170	175	184	191	210
HZB12-230	151	161	174	185	195	205	212	218	229	235	249
HZB6-110	70.4	73.5	78.5	81.8	84.8	87.9	91.1	93.2	97.3	101	109
HZB6-125	79.6	85.5	94.8	102	108	112	115	118	120	122	128
HZB6-160	110	114	122	128	135	141	145	150	159	164	177
HZB6-200	130	136	144	150	158	164	170	174	181	186	193

Amps to 1.80 VPC					
	7	8	10	12	20
	2.11	1.88	1.57	1.36	0.91
	3.07	2.78	2.33	2.00	1.30
	3.61	3.25	2.71	2.33	1.52
	3.78	3.40	2.85	2.46	1.61
	5.49	4.99	4.26	3.69	2.40
	6.70	6.09	5.10	4.39	2.84
	7.31	6.53	5.36	4.56	2.86
	8.40	7.53	6.31	5.43	3.61
	8.83	8.00	6.74	5.76	3.73
	10.26	9.20	7.70	6.60	4.22
	11.5	10.35	8.70	7.44	4.80
	12.4	11.2	9.32	7.98	5.16
	12.8	11.4	9.53	8.19	5.35
	14.8	13.2	10.80	9.17	5.69
	14.4	13.0	10.9	9.35	5.90
	18.5	16.7	13.9	11.82	7.58
	18.0	16.2	13.5	11.6	7.64
	21.5	19.5	16.4	14.2	9.15
	25.0	22.6	19.0	16.4	10.82
	30.8	27.8	23.5	20.1	12.8
	13.2	11.9	9.94	8.57	5.62
	17.1	15.3	12.52	10.57	6.67
	21.3	19.3	16.3	14.0	9.14
	25.1	22.5	18.8	16.1	10.0

Battery Mo del	Time in Hours Ah to 1.80 VPC 20-25 °C										
	1.5	2	3	4	5	6	7	8	10	12	20
HZB12-18	11.6	12.4	13.2	13.8	14.2	14.4	14.8	15.0	15.7	16.3	18.1
HZB12-26	15.9	16.8	18.4	19.3	20.0	20.9	21.5	22.2	23.3	24.0	26.1
HZB12-28	18.4	19.6	21.3	22.4	23.5	24.4	25.3	26.0	27.1	27.9	30.4
HZB12-33	21.3	21.9	22.9	23.9	24.8	25.7	26.5	27.2	28.5	29.5	32.2
HZB12-44	29.2	30.5	32.4	33.9	35.4	36.9	38.4	39.9	42.6	44.2	48.0
HZB12-55	36.0	37.2	39.2	41.4	43.4	45.0	46.9	48.8	51.0	52.6	56.8
HZB12-60	38.8	41.9	45.3	47.6	49.0	50.1	51.2	52.2	53.6	54.7	57.2
HZB12-70J	46.6	48.3	50.3	52.4	54.3	56.5	58.8	60.2	63.1	65.1	72.2
HZB12-70	48.1	50.3	52.9	55.1	57.3	59.5	61.8	64.0	67.4	69.1	74.7
HZB12-80	55.2	57.3	60.3	63.3	66.2	69.2	71.8	73.6	77.0	79.2	84.4
HZB12-90	61.6	64.2	68.0	71.7	74.7	77.8	80.7	82.8	87.0	89.2	96.0
HZB12-100	65.6	68.3	72.7	76.6	80.4	84.2	86.9	89.5	93.2	95.7	103
HZB12-110	72.8	75.7	78.6	81.0	84.1	86.9	89.3	91.5	95.3	98.3	107
HZB12-115	77.8	83.3	90.3	95.4	98.6	102	104	105	108	110	114
HZB12-120	80.0	83.2	87.5	90.9	94.6	97.7	101	104	109	112	118
HZB12-135	99.6	104	111	117	121	126	129	133	139	142	152
HZB12-150	99	104	109	113	117	122	126	130	135	140	153
HZB12-160	114	119	125	131	137	144	150	156	164	170	183
HZB12-200	134	139	147	153	161	169	175	181	190	197	216
HZB12-230	155	164	177	189	198	209	216	223	235	241	255
HZB6-110	71.8	74.9	79.9	83.2	86.4	89.6	92.5	95.1	99	103	112
HZB6-125	81.1	87.3	97.1	105	112	116	119	122	125	127	133
HZB6-160	113	117	125	132	138	144	149	154	163	168	183
HZB6-200	136	142	150	157	164	170	175	180	188	193	201

Amps to 1.75 VPC					
	7	8	10	12	20
	2.15	1.91	1.59	1.37	0.92
	3.10	2.81	2.35	2.02	1.31
	3.64	3.27	2.73	2.35	1.53
	3.85	3.45	2.88	2.48	1.63
	5.59	5.08	4.33	3.76	2.45
	6.86	6.22	5.19	4.46	2.90
	7.39	6.59	5.40	4.60	2.89
	8.49	7.63	6.39	5.48	3.65
	9.01	8.16	6.87	5.87	3.80
	10.4	9.37	7.82	6.70	4.28
	11.7	10.5	8.82	7.54	4.88
	12.6	11.4	9.49	8.16	5.30
	13.1	11.7	9.72	8.37	5.46
	14.9	13.3	10.91	9.26	5.74
	14.7	13.2	11.1	9.49	5.97
	18.9	17.1	14.2	12.16	7.78
	18.3	16.5	13.7	11.9	7.80
	21.8	19.8	16.7	14.4	9.41
	25.3	22.9	19.3	16.7	11.08
	31.3	28.3	23.9	20.5	13.0
	13.5	12.1	10.1	8.73	5.74
	17.3	15.5	12.7	10.7	6.75
	21.6	19.6	16.6	14.3	9.38
	25.4	22.8	19.0	16.3	10.23

Battery Mo del	Time in Hours Ah to 1.75 VPC 20-25 °C										
	1.5	2	3	4	5	6	7	8	10	12	20
HZB12-18	11.8	12.6	13.5	14.0	14.4	14.7	15.0	15.3	15.9	16.5	18.4
HZB12-26	16.1	17.0	18.5	19.5	20.2	21.0	21.7	22.5	23.5	24.2	26.3
HZB12-28	18.6	19.8	21.5	22.6	23.7	24.7	25.5	26.2	27.3	28.2	30.7
HZB12-33	21.6	22.2	23.3	24.2	25.2	26.1	26.9	27.6	28.8	29.8	32.5
HZB12-44	29.6	30.8	32.9	34.5	36.0	37.5	39.1	40.7	43.3	45.1	48.9
HZB12-55	36.5	37.7	39.9	42.2	44.3	46.0	48.0	49.8	51.9	53.5	57.9
HZB12-60	39.4	42.5	45.7	48.0	49.4	50.5	51.7	52.7	54.0	55.3	57.8
HZB12-70J	47.5	49.1	51.0	52.9	55.0	57.2	59.4	61.0	63.9	65.8	73.0
HZB12-70	48.9	51.2	53.8	56.2	58.5	60.7	63.1	65.2	68.7	70.4	76.0
HZB12-80	56.1	58.2	61.6	64.6	67.5	70.4	73.1	74.9	78.2	80.4	85.7
HZB12-90	62.7	65.3	69.2	72.6	75.9	79.2	82.1	84.3	88.2	90.5	97.6
HZB12-100	66.8	69.5	74.0	77.7	81.5	85.4	88.2	90.9	94.9	97.9	106
HZB12-110	73.8	76.7	80.0	82.7	86.1	88.9	91.4	93.4	97.2	100.4	109
HZB12-115	78.9	84.2	91.2	96.5	100	102	105	106	109	111	115
HZB12-120	81.5	84.7	88.9	92.2	96.1	99.4	103	106	111	114	119
HZB12-135	101	107	113	119	124	128	132	137	142	146	156
HZB12-150	101	105	111	115	120	124	128	132	137	142	156
HZB12-160	117	121	127	133	140	147	153	158	167	173	188
HZB12-200	136	141	149	156	164	171	177	183</			

Battery Model	Time in Minutes - Watts per cell to 1.85 VPC 20-25 °C												
	5	10	15	20	25	30	35	40	45	1	1.5	2	3
HZB12-18	85.4	60.9	50.0	42.7	37.1	32.6	29.2	26.4	24.2	19.5	14.4	11.6	8.29
HZB12-26	126	91.0	73.9	61.6	53.0	46.6	41.5	37.5	34.3	27.6	20.1	16.1	11.8
HZB12-28	146	107	85.7	71.5	61.4	54.1	48.4	43.7	39.9	32.0	23.3	18.7	13.7
HZB12-33	185	136	107	89.2	76.6	67.4	60.2	54.2	49.4	39.1	27.5	21.3	14.9
HZB12-44	222	178	143	118	101	88.4	79.1	71.4	65.3	51.9	36.9	28.6	19.8
HZB12-55	265	210	171	141	120	105	93.7	85.0	78.1	62.6	45.1	35.1	24.5
HZB12-60	269	190	156	134	118	105	94.9	86.3	79.8	64.9	49.2	40.4	30.0
HZB12-70J	300	241	200	172	150	133	120	110	101	81.5	57.9	44.7	30.8
HZB12-70	312	251	209	177	154	137	124	113	105	84.4	60.3	46.7	32.1
HZB12-80	323	266	224	191	169	151	138	126	118	96.0	69.1	53.6	36.8
HZB12-90	383	301	249	214	187	169	152	139	129	105	77.1	60.7	42.3
HZB12-100	422	339	283	242	210	187	169	155	143	116	83.9	65.6	45.8
HZB12-110	461	370	311	268	234	208	187	169	155	124	89.8	70.8	49.7
HZB12-115	494	376	302	255	221	198	179	163	152	124	93.9	75.5	54.1
HZB12-120	473	386	327	284	250	223	201	183	169	136	98.9	77.5	54.1
HZB12-135	513	421	381	341	309	281	258	238	218	174	125	98.5	68.4
HZB12-150	445	368	326	295	264	241	220	201	186	153	113	91.5	64.9
HZB12-160	544	474	416	374	339	308	283	262	243	200	145	114	79.2
HZB12-200	570	493	439	395	361	333	309	287	269	223	160	125	87.6
HZB12-230	652	560	497	448	411	381	354	328	309	258	190	149	106
HZB6-110	410	335	299	257	227	203	182	166	154	125	89.4	70.1	50.3
HZB6-125	480	391	335	286	252	223	199	180	164	132	98.3	79.6	58.2
HZB6-160	500	421	365	331	308	283	262	246	232	192	140	110	78.1
HZB6-200	606	530	466	417	376	345	321	298	277	229	167	131	91.9

Battery Model	Time in Hours - Watts per cell to 1.85 VPC											
	4	5	6	7	8	10	12	16	20			
HZB12-18	6.45	5.32	4.54	3.98	3.54	2.93	2.50	1.63				
HZB12-26	9.41	7.86	6.81	6.04	5.43	4.54	3.90	2.57				
HZB12-28	10.9	8.91	7.53	6.52	5.78	4.72	4.02	2.59				
HZB12-33	11.6	9.58	8.25	7.27	6.52	5.45	4.69	3.09				
HZB12-44	15.2	12.5	10.6	9.28	8.28	6.84	5.86	3.78				
HZB12-55	19.1	15.8	13.5	11.9	10.6	8.83	7.58	4.98				
HZB12-60	24.1	20.1	17.3	15.1	13.5	11.1	9.54	6.20				
HZB12-70J	23.7	19.4	16.5	14.4	12.7	10.6	9.08	5.90				
HZB12-70	24.7	20.2	17.3	15.1	13.4	11.0	9.44	6.15				
HZB12-80	28.3	23.3	19.9	17.4	15.5	12.8	11.0	7.18				
HZB12-90	32.6	26.6	22.7	19.8	17.7	14.6	12.5	8.09				
HZB12-100	35.6	29.3	25.1	22.1	19.8	16.4	14.1	9.17				
HZB12-110	38.5	31.7	27.1	23.8	21.3	17.7	15.2	10.0				
HZB12-115	42.3	34.9	30.1	26.6	23.8	19.8	17.0	11.2				
HZB12-120	41.4	34.6	29.6	26.2	23.4	19.5	16.7	11.0				
HZB12-135	52.5	42.6	36.0	31.2	27.5	22.5	19.1	12.3				
HZB12-150	50.7	41.7	35.6	31.2	27.9	23.1	19.9	13.1				
HZB12-160	61.2	50.2	43.1	37.8	33.8	27.9	23.8	15.3				
HZB12-200	68.2	56.3	47.6	41.7	37.3	31.0	26.5	17.3				
HZB12-230	82.7	68.6	58.9	51.8	46.3	38.6	33.1	21.5				
HZB6-110	39.2	32.4	27.8	24.3	21.7	18.0	15.4	10.1				
HZB6-125	46.6	39.0	33.7	29.8	26.7	22.1	18.9	12.2				
HZB6-160	61.7	52.0	44.7	39.3	35.2	29.2	24.9	16.0				
HZB6-200	71.6	59.1	50.6	44.4	39.6	33.1	28.4	18.5				

Battery Model	Time in Minutes - Watts per cell to 1.80 VPC 20-25 °C												
	5	10	15	20	25	30	35	40	45	60	90	120	180
HZB12-18	94.8	66.0	53.1	44.7	38.5	33.8	30.1	27.3	25.0	20.1	14.9	11.9	8.49
HZB12-26	132	94.9	76.0	62.9	54.1	47.5	42.3	38.3	35.0	28.0	20.4	16.3	12.0
HZB12-28	153	111	88.5	72.8	62.7	55.1	49.2	44.4	40.6	32.4	23.5	18.8	13.8
HZB12-33	196	140	110	91.9	78.6	68.9	61.5	55.2	50.4	39.9	28.0	21.7	15.1
HZB12-44	236	191	151	124	105	91.7	81.7	73.6	67.2	53.4	37.8	29.2	20.2
HZB12-55	288	226	179	147	125	109	97.3	87.9	80.7	64.0	45.9	35.8	25.1
HZB12-60	298	209	168	142	124	110	98.5	89.6	82.6	66.9	50.7	41.5	30.5
HZB12-70J	329	259	213	179	156	138	124	113	104	83.3	58.9	45.3	31.2
HZB12-70	342	271	221	188	163	144	129	118	108	86.7	61.3	47.2	32.4
HZB12-80	357	286	239	203	176	156	143	131	121	98.1	70.3	54.2	37.2
HZB12-90	432	325	266	227	198	176	158	144	133	108	78.5	61.8	43.0
HZB12-100	488	370	301	254	220	195	175	160	147	119	85.5	66.8	46.6
HZB12-110	542	415	337	286	246	218	195	175	160	127	91.5	71.8	50.3
HZB12-115	534	394	318	268	233	207	186	170	157	128	96.3	77.3	55.3
HZB12-120	546	424	353	301	262	233	209	190	175	141	101	78.9	54.8
HZB12-135	631	478	412	362	324	293	266	245	224	178	128	100	69.3
HZB12-150	533	414	360	318	283	254	231	210	194	158	117	94	66.3
HZB12-160	688	549	466	405	364	327	298	273	253	205	149	116	80.5
HZB12-200	684	547	478	425	383	352	323	300	279	229	165	128	90.0
HZB12-230	756	615	532	476	434	399	369	341	318	264	193	151	107
HZB6-110	477	373	320	272	237	211	188	171	158	127	91.1	71.4	51.2
HZB6-125	557	436	358	303	262	232	206	185	169	136	102	82.5	60.3
HZB6-160	626	493	410	365	331	301	278	260	244	198	144	112	80.0
HZB6-200	749	604	511	451	407	374	343	318	295	239	173	135	94.7

Battery Model	Time in Hours - Watts per cell to 1.80 VPC											
	4	5	6	7	8	10	12	16	20			
HZB12-18	6.62	5.47	4.66	4.08	3.63	3.00	2.55	1.67				
HZB12-26	9.55	7.97	6.92	6.14	5.52	4.61	3.95	2.62				
HZB12-28	11.0	9.01	7.62	6.61	5.86	4.78	4.07	2.64				
HZB12-33	11.8	9.73	8.35	7.36	6.62	5.53	4.78	3.17				
HZB12-44	15.5	12.7	10.8	9.43	8.42	6.96	5.96	3.89				
HZB12-55	19.5	16.1	13.8	12.1	10.8	9.00	7.72	5.13				
HZB12-60	24.5	20.5	17.6	15.4	13.7	11.3	9.72	6.37				
HZB12-70J	24.0	19.7	16.8	14.6	12.9	10.8	9.24	6.06				
HZB12-70	24.9	20.4	17.4	15.2	13.6	11.2	9.61	6.33				
HZB12-80	28.7	23.6	20.2	17.7	15.8	13.0	11.2	7.37				
HZB12-90	33.1	27.1	23.1	20.2	17.9	14.8	12.7	8.32				
HZB12-100	36.1	29.8	25.6	22.5	20.1	16.7	14.3	9.34				
HZB12-110	39.0	32.1	27.6	24.2	21.7	18.0	15.5	10.3				
HZB12-115	43.1	35.5	30.6	27.0	24.2	20.1	17.3	11.4				
HZB12-120	42.0	35.2	30.2	26.6	23.8	19.8	17.0	11.2				
HZB12-135	53.1	43.1	36.4	31.6	27.9	22.8	19.4	12.5				
HZB12-150	51.7	42.5	36.3	31.8	28.4	23.6	20.2	13.4				
HZB12-160	62.3	51.2	43.9	38.6	34.5	28.5	24.4	15.7				
HZB12-200	70.0	57.8	49.0	43.0	38.4	31.8	27.2	17.8				
HZB12-230	83.6	69.5	59.7	52.7	47.2	39.4	33.7	22.1				
HZB6-110	40.1	33.1	28.3	24.9	22.3	18.5	15.9	10.5				
HZB6-125	48.0	40.0	34.6	30.5	27.3	22.5	19.3	12.5				
HZB6-160	63.2	53.3	45.7	40.2	36.0	30.0	25.6	16.5				
HZB6-200	73.9	60.7	52.0	45.6	40.9	34.0	29.2	19.2				

Battery Model	Time in Minutes - Watts per cell to 1.75 VPC 20-25 °C												
	5	10	15	20	25	30	35	40	45	60	90	120	180
HZB12-18	100	68.5	54.8	45.8	39.3	34.3	30.7	27.7	25.3	20.3	15.1	12.0	8.69
HZB12-26	137	98.3	78.2	64.4	55.1	48.3	43.0	38.9	35.5	28.4	20.5	16.4	12.1
HZB12-28	159	114	90.4	74.0	63.5	55.9	49.9	45.0	41.1	32.9	23.7	19.0	13.9
HZB12-33	201	143	113	93.3	79.6	69.7	62.1	55.8	50.9	40.2	28.2	21.9	15.3
HZB12-44	247	196	154	126	107	93.1	83.0	74.7	68.1	54.0	38.1	29.6	20.3
HZB12-55	299	233	183	150	127	111	98.7	89.2	81.7	64.8	46.4	36.1	25.3
HZB12-60	315	218	175	147	127	113	100.9	91.6	84.3	68.6	51.8	42.3	31.0
HZB12-70J	346	273	221	185	159	142	127	116	106	84.6	59.6	45.8	31.5
HZB12-70													

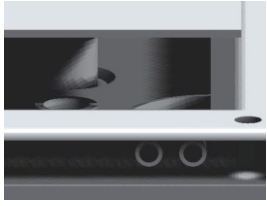


Battery Model	Time in Minutes - Amps to 1.65 VPC 20-25 °C														
	5	10	15	20	25	30	35	40	45	60	90	120	180		
HZB12-18	60.0	40.2	31.3	25.9	22.1	19.2	17.1	15.4	14.0	11.2	8.2	6.5	4.7		
HZB12-26	82.8	56.6	44.4	36.3	30.7	26.7	23.7	21.2	19.3	15.2	10.9	8.6	6.3		
HZB12-28	96.0	66.6	51.4	41.9	35.5	30.9	27.5	24.7	22.4	17.7	12.7	10.1	7.3		
HZB12-33	114	74.7	58.8	49.0	43.2	38.2	33.9	30.3	27.4	21.2	14.7	11.4	7.9		
HZB12-44	144	98	78	65.2	56.3	49.6	44.4	40.2	36.6	28.6	20.1	15.7	11.2		
HZB12-55	180	132	102	83.0	70.5	61.5	54.9	49.5	45.1	35.8	25.0	19.4	13.6		
HZB12-60	184	114	88	72.9	62.6	55.5	49.7	45.4	42.1	34.8	26.8	21.7	15.6		
HZB12-70J	214	167	131	107	91.4	79.7	71.0	64.2	58.6	46.0	32.2	25.1	17.4		
HZB12-70	219	157	128	108	93.1	81.9	73.1	66.2	60.3	47.6	33.4	26.1	18.3		
HZB12-80	254	185	146	123	105	92.5	83.0	75.7	69.2	54.7	38.2	29.8	21.0		
HZB12-90	278	202	157	131	112	99.0	89.3	81.6	74.9	59.7	43.1	33.9	23.9		
HZB12-100	328	232	181	148	126	110	98.6	89.4	81.6	64.6	45.7	35.6	25.2		
HZB12-110	355	253	201	164	140	123	109	98.6	89.6	70.4	50.3	39.3	27.4		
HZB12-115	361	249	191	159	137	121	109	98.8	90.6	73.4	53.7	42.9	30.8		
HZB12-120	366	270	213	177	152	133	119	107	98	78.4	55.5	43.1	30.2		
HZB12-135	420	300	246	213	188	168	151	137	124	97.7	70.4	55.5	39.0		
HZB12-150	413	299	243	208	182	161	145	131	119	95.7	69.0	54.2	37.9		
HZB12-160	466	345	282	240	210	186	167	152	140	111	79.2	61.4	43.3		
HZB12-200	474	369	312	271	241	217	197	180	166	131	92.9	72.3	51.3		
HZB12-230	550	407	339	299	269	244	221	203	186	149	107	85	61		
HZB6-110	316	229	190	158	136	119	105	96	87.7	70.0	49.9	38.8	27.6		
HZB6-125	369	263	204	169	144	126	113	102	94.1	76.7	56.5	45.3	33.4		
HZB6-160	424	319	249	214	189	170	154	143	133	108	78.8	61.2	43.1		
HZB6-200	494	371	309	270	240	217	199	182	168	134	94.9	73.9	51.8		

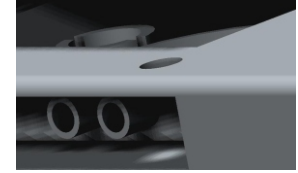
Battery Model	Time in Minutes - Amps to 1.60 VPC 20-25 °C														
	5	10	15	20	25	30	35	40	45	60	90	120	180		
HZB12-18	61.9	41.2	32.0	26.3	22.5	19.6	17.3	15.6	14.3	11.3	8.3	6.6	4.7		
HZB12-26	86.6	58.1	45.4	36.9	31.1	27.0	23.9	21.4	19.5	15.4	11.0	8.7	6.3		
HZB12-28	100	68.8	52.4	42.8	36.3	31.4	27.7	24.9	22.6	17.9	12.8	10.2	7.4		
HZB12-33	118	77.0	59.9	49.9	43.8	38.7	34.3	30.7	27.7	21.3	14.8	11.5	8.0		
HZB12-44	149	101	79	66.0	56.7	50.0	44.8	40.5	36.9	28.9	20.3	15.8	11.3		
HZB12-55	189	136	104	84.2	71.4	62.2	55.4	50.0	45.6	36.1	25.3	19.5	13.7		
HZB12-60	188	116	89	73.5	62.9	55.9	50.0	45.7	42.3	35.1	27.1	21.8	15.7		
HZB12-70J	226	172	134	109	92.4	80.5	71.7	64.8	59.1	46.4	32.4	25.3	17.5		
HZB12-70	230	161	130	110	94.5	82.8	73.9	66.9	60.8	48.0	33.6	26.3	18.4		
HZB12-80	272	193	151	125	108	94.3	84.4	76.9	70.0	55.3	38.6	30.0	21.2		
HZB12-90	301	209	163	134	115	101	91.0	83.0	75.9	60.5	43.5	34.3	24.1		
HZB12-100	347	239	185	151	128	112	99.8	90.5	82.7	65.1	46.1	35.9	25.4		
HZB12-110	371	260	204	167	142	124	110	99.5	90.4	71.0	50.7	39.6	27.6		
HZB12-115	366	253	193	161	139	122	110	99.5	91.5	73.9	54.0	43.1	31.0		
HZB12-120	385	279	218	180	154	135	120	108	99	78.9	56.0	43.4	30.4		
HZB12-135	446	313	252	218	191	170	153	138	125	98.4	70.9	55.8	39.3		
HZB12-150	432	311	251	213	185	163	147	132	121	96.7	69.6	54.7	38.3		
HZB12-160	490	357	288	245	213	188	170	154	141	112	79.8	61.9	43.6		
HZB12-200	501	383	319	277	245	220	200	183	167	132	93.6	72.9	51.7		
HZB12-230	575	417	347	304	273	248	224	205	188	150	108	85	62		
HZB6-110	330	236	194	160	137	120	106	97	88.6	70.7	50.3	39.1	27.8		
HZB6-125	386	270	208	171	146	128	114	104	95.5	77.5	57.0	45.7	33.6		
HZB6-160	444	330	254	218	192	173	156	145	135	110	79.5	61.8	43.6		
HZB6-200	523	381	317	275	245	221	202	185	170	135	96.0	74.8	52.4		

Battery Model	Time in Minutes - Watts per cell to 1.65 VPC 20-25 °C														
	5	10	15	20	25	30	35	40	45	60	90	120	180		
HZB12-18	106	72.1	57.3	47.5	40.6	35.5	31.6	28.4	26.0	20.8	15.5	12.4	8.92		
HZB12-26	148	103	81.2	66.5	56.8	49.7	44.3	39.9	36.4	28.9	20.8	16.7	12.2		
HZB12-28	170	120	93.8	76.7	65.4	57.4	51.1	46.1	42.1	33.6	24.1	19.2	14.1		
HZB12-33	210	148	116	95.4	81.3	71.0	63.1	56.8	51.7	40.7	28.6	22.1	15.5		
HZB12-44	259	204	159	130	110	95.3	84.5	76.1	69.3	55.1	38.8	30.1	20.7		
HZB12-55	322	244	189	154	130	114	101	91.2	83.4	66.1	47.3	36.8	25.8		
HZB12-60	349	234	184	153	131	116	103	93.6	86.4	70.0	52.8	43.0	31.6		
HZB12-70J	376	292	232	192	165	146	131	118	108	86.2	60.6	46.6	32.0		
HZB12-70	391	305	240	198	171	150	134	122	112	89.7	63.1	48.5	33.3		
HZB12-80	442	331	267	221	191	167	151	138	128	103	72.3	55.7	38.2		
HZB12-90	506	365	292	243	209	185	166	151	139	113	81.5	63.9	44.5		
HZB12-100	587	410	325	271	233	205	183	167	154	123	88.3	68.7	47.8		
HZB12-110	634	466	370	308	264	231	205	185	169	133	95.6	74.6	52.0		
HZB12-115	637	441	345	286	247	219	197	180	166	135	101	80.3	56.8		
HZB12-120	642	474	381	319	275	244	219	199	182	146	105	81.2	56.2		
HZB12-135	767	554	455	393	348	311	281	257	235	186	132	103	71.1		
HZB12-150	655	494	411	352	305	272	245	221	204	165	121	97	67.9		
HZB12-160	833	632	522	442	390	348	316	288	265	213	154	120	82.7		
HZB12-200	835	630	532	464	416	378	346	320	298	240	172	134	93.8		
HZB12-230	899	693	590	515	463	422	387	356	331	274	199	155	110		
HZB6-110	565	429	353	293	251	222	196	178	164	132	93.7	73.4	52.8		
HZB6-125	660	502	395	326	278	243	216	194	177	143	107	87.7	63.9		
HZB6-160	758	563	454	397	356	322	295	274	255	209	151	117	83.0		
HZB6-200	876	676	566	493	437	397	364	335	311	254	182	142	99.0		

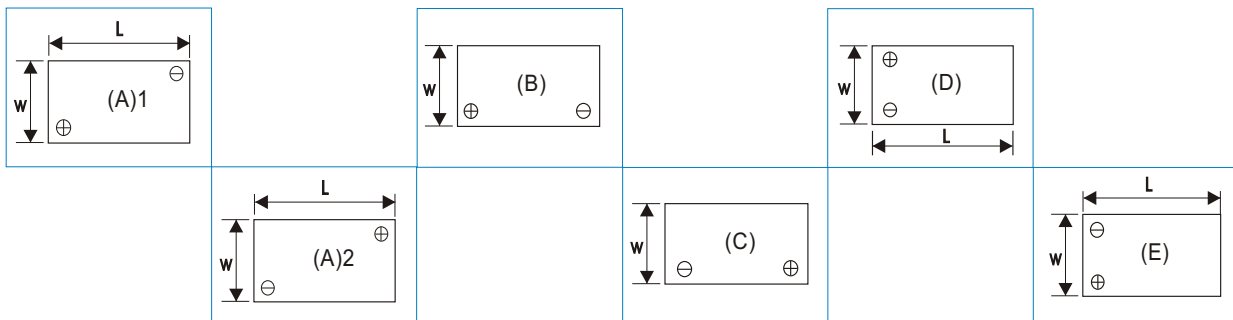
Battery Model	Time in Minutes - Watts per cell to 1.60 VPC 20-25 °C														
	5	10	15	20	25	30	35	40	45	60	90	120	180		
HZB12-18	108	73.8	58.4	48.4	41.2	36.0	32.1	28.9	26.4	21.1	15.6	12.5	9.00		
HZB12-26	154	106	82.5	67.3	57.3	50.1	44.7	40.3	36.7	29.2	21.0	16.8	12.3		
HZB12-28	176	122	95.2	77.9	66.5	58.1	51.7	46.6	42.6	33.9	24.3	19.4	14.2		
HZB12-33	215	152	117	96.5	82.2	71.7	63.7	57.3	52.2	41.1	28.9	22.3	15.6		
HZB12-44	267	208	161	131	111	96.4	85.4	76.7	69.9	55.4	39.1	30.3	20.8		
HZB12-55	336	250	192	155	131	115	102	92.3	84.3	66.7	47.7	37.0	26.0		
HZB12-60	360	239	186	155	133	117	104	94.5	87.1	70.4	53.1	43.4	31.9		
HZB12-70J	394	299	237	195	167	147	132	120	109	86.9	61.0	46.9	32.2		
HZB12-70	410	313	245	201	173	153	137	124	114	90.5	63.7	48.8	33.4		
HZB12-80	470	344	274	226	193	170	154	139	129	104	72.9	56.0	38.5		
HZB12-90	536	376	297	246	212	187	168	153	141	114	82.3	64.4	44.8		
HZB12-100	617	420	330	275	236	207	185	168	155	124	89.0	69.0	48.1		
HZB12-110	661	477	377	311	267	233	207	187	170	134	96.2	75.0	52.4		
HZB12-115	648	447	348	288	249	220	198	181	168	136	102	80.9	57.2		
HZB12-120	673	486	389	325	279	247	222	201	184	147	105	81.6	56.5		
HZB12-135	817	578	470	402	355	316	286	261	238	188	133	104	71.5		
HZB12-150	682	520	423	361	311	277	248	224	206	166	122	97	68.4		
HZB12-160	880	650	532	450	395	352	319	291	267	214	154	120	83.2		
HZB12-200															



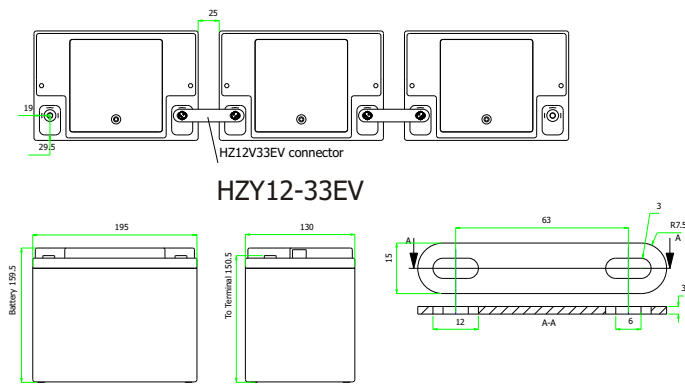
**Central Gassing** - Haze produce some models with a integral central gassing system. This system is a useful feature when batteries are installed in an IP66 cabinet. Sealing prevents any escaping gas from exiting the enclosure. Central gassing allows a tube carrying the emissions to pass through a seal to atmosphere. Haze are adding this feature to a number of sizes, if you require this feature please contact us for an up-to-date list of models included.



Battery Model	Qty Per Box	Dimensions (mm) & weight (kg)				Dimensions (Inches) & weight (lbs)				Terminal Layout	BCI Group Size	Internal Resistance mOhms	Conductance Values +/- 25%	Maximum Charge Current	CCA at 0 °C	Short Circuit Amps
		Length	Width	Height	Weight	Length	Width	Height	Weight							
HZB12-18	2	181	76	167	5.4	7.13	2.99	6.57	11.9	C - M5	-	11	400	4.5	270	732
HZB12-26	1	168	178	124	8.2	6.61	7.01	4.88	18.1	C - M5	-	6.5	420	6.5	300	900
HZB12-28	1	166	125	175	9	6.54	4.92	6.89	19.9	C - M5	-	7	450	7	305	910
HZB12-33	1	195	130	160	10.4	7.68	5.12	6.30	23.0	B - M6	U1	7	500	8	320	1100
HZB12-44	1	198	167	157	13.3	7.80	6.57	6.18	29.4	C - M6	-	6.2	670	11	350	1400
HZB12-55	1	229	138	213	17	9.02	5.43	8.39	37.6	B - M6	22NF	6.5	600	14	380	1700
HZB12-60	1	228	139	217	18.6	8.98	5.47	8.54	41.1	B - M6	-	5.7	680	15	410	1750
HZB12-70J	1	349	168	175	21.6	13.74	6.61	6.89	47.7	C - M6	-	5	900	18	550	2100
HZB12-70	1	260	168	211	24.3	10.24	6.61	8.31	53.7	B - M6	24	5	1000	18	550	2100
HZB12-80	1	260	168	211	25.4	10.24	6.61	8.31	56.1	B - M6	24	5	1150	20	620	2400
HZB12-90	1	306	168	211	30.1	12.05	6.61	8.31	66.5	B - M6	27	4	900	22	680	2650
HZB12-100	1	306	168	211	28.8	12.05	6.61	8.31	63.6	B - M6	27	4	1300	25	780	2900
HZB12-110	1	329	173	209	32.5	12.95	6.81	8.23	71.8	B - M6	31	4	1200	27	960	3000
HZB12-115	1	349	174	216.5	37.7	13.74	6.85	8.52	83.3	B - M6	-	3.6	1230	28.5	980	3100
HZB12-120	1	408	176	227	37	16.06	6.93	8.94	81.8	B - M6	-	3	1250	30	1020	3300
HZB12-135	1	340	173	283	40.6	13.39	6.81	11.14	89.7	B - M6	-	2.73	1300	35	1160	3750
HZB12-150	1	482	170	242	44	18.98	6.69	9.53	97.2	B - M6	-	2.5	1300	38	1300	4200
HZB12-160	1	530	209	214	55	20.87	8.23	8.43	121.6	E - M6	4D	2	1750	40	1440	4700
HZB12-200	1	520	240	220	60.9	20.47	9.45	8.66	134.6	E - M8	-	<2	2050	50	1670	5400
HZB12-230	1	521	269	203	73.5	20.51	10.59	7.99	162.4	E - M8	8D	<2	2150	57	1870	5900
HZB6-110	1	193	168	205	17.9	7.60	6.61	8.07	39.6	A - M6	-	4	1300	27	1010	3200
HZB6-125	1	345	128	217	24	13.58	5.04	8.54	53.0	A2 - M6	-	1.8	1400	31	1100	3500
HZB6-160	1	298	171	226	26.4	11.73	6.73	8.90	58.3	A - M6	-	2	1500	40	1290	4600
HZB6-200	1	323	178	225	31.8	12.72	7.01	8.86	70.3	A - M8	-	<2	2050	50	1600	5000



**Terminal Layout details**



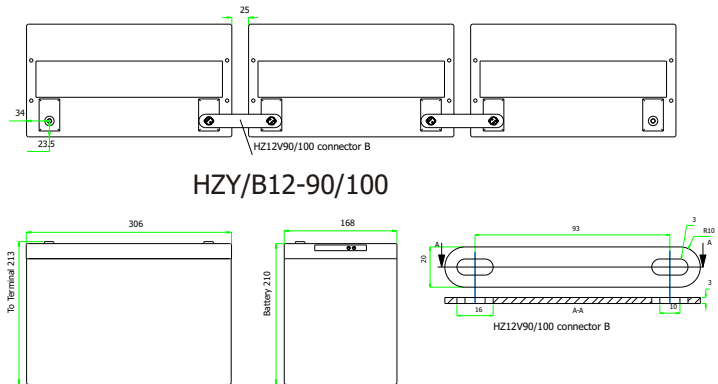
HZY12-33EV

Battery installations have many variables : space available, autonomy times, load carrying requirements etc.

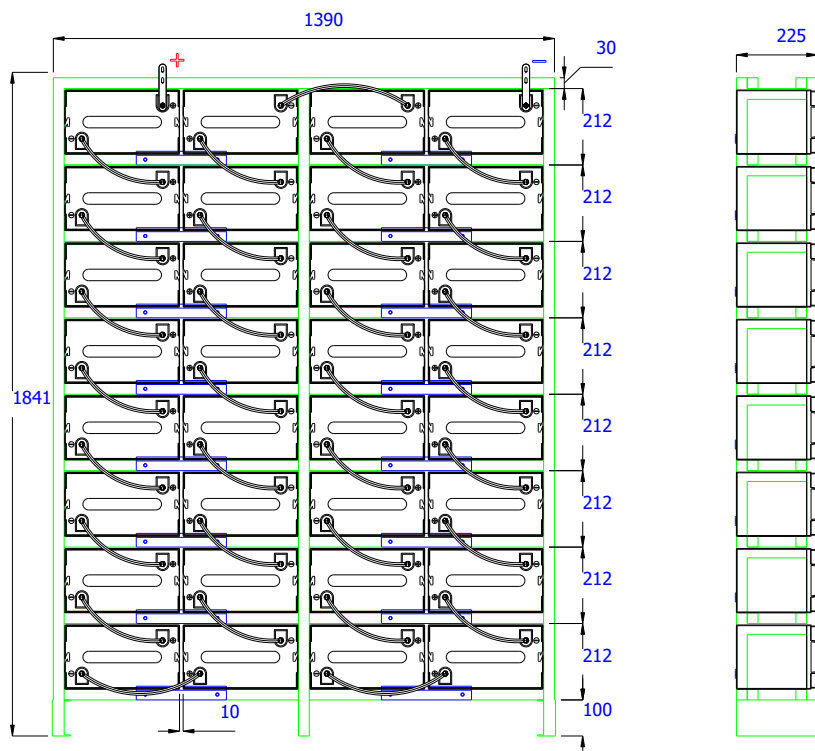
Haze Engineering department is at the customers disposal to find the best solution, provide dimensioned layout drawings and wiring diagrams.

A tailor made solution to meet the customers requirements.

All drawings are submitted for customer approval to ensure trouble free installation.



HZY/B12-90/100



Racking is available to suit available space and required configuration.

Special cables and / or standard connectors can be provided on request along with wiring diagrams.

A range of terminal covers are available to cover large and small batteries and cables or connectors.

The example rack shown is for HZB/Y6-200.



130809

VRLA Product Range

- 4, 6 & 12 Volt AGM 1.3 to 230AH
- 6 & 12 Volt Gel 7.5 to 230AH
- 12 Volt Front Access AGM
- 12 Volt Front Access Gel
- 2 Volt AGM & Gel 50 to 3850AH
  - EV Gel
  - EV AGM
  - Marine Gel
  - Solar